

September 9, 1999

State Water Resources Control Board
Division of Water Quality
P. O. Box 944213
Sacramento, CA 94244-2130

Attention: Todd Thompson

SUBJECT: Comments On The Draft Environment Impact Report For The General Waste Discharge Requirements For Biosolids Land Application (DEIR-GWDRFBLA) Including The General Order (GO)

The East Bay Municipal Utility District (EBMUD), serving 1.2 million people in the Oakland area, appreciates the opportunity to comment on the Draft Environmental Impact Report (DEIR) for the general waste discharge requirements for biosolids land application. EBMUD supports your agency's efforts to develop a General Order (GO) for biosolids land application.

EBMUD commends the State Water Resources Control Board (SWRCB) for its efforts in developing a DEIR that will continue the land application of biosolids while addressing impacts to public health and the environment. The use of the U.S. EPA regulations 40 CFR part 503 demonstrates that the SWRCB is basically committed to developing an EIR based on sound science.

Since 1983, EBMUD has fostered the reuse of biosolids in a beneficial manner. Initially, EBMUD operated an EPA award-winning biosolids compost operation that recycled over 200,000 tons of biosolids as a very successful compost product. In 1995, EBMUD began agricultural land application of biosolids that has resulted in 100% beneficial reuse of biosolids.

EBMUD's general comments are included below. Specific comments of a technical nature that apply to sections of the GO are listed in Attachment A.

Increased Costs

EBMUD is concerned that the overall effect of the GWDRFBLA, as drafted, will be to increase land application costs to the point where landfill disposal may be more attractive than beneficial reuse; this is a counterproductive result from our viewpoint.

Costs will be increased by the increased level of testing, the continual payment of fees even if a field is left fallow, imposition of requirements beyond the 40CFR503 requirements, multiple Notices of Intent (NOI) for plots of land in excess of 2000 contiguous acres, no releases of

16-1

State Water Resources Control Board

September 9, 1999

Page 2

particulates from a site during application or incorporation of biosolids, special site assessments, and extended grazing restrictions. Individually, any one measure may seem less than significant and relatively inexpensive to adopt, but collectively, all of the measures mentioned will add up to drive land application costs to the point where landfill disposal will likely be more economically feasible. Land application costs are already beginning to exceed landfilling costs in the State of California, and our own current contract procurement for biosolids handling includes the option for landfill disposal due to known/expected cost increases in land application of biosolids.

16-1
(cont)

The SWRCB should review every requirement against the measure of whether or not it is necessary to protect public health and the environment, to avoid fueling the current trend of spiraling land application costs in the State. Alameda County, the county in which EBMUD operates, is already basically surrounded by counties that ban or restrict the land application of biosolids at the local level. More restrictive regulation at the state level could work to force EBMUD to landfill, rather than reuse, biosolids.

16-2

Manual of Good Practice

Many public and private expert practitioners have worked hard to prepare the *California Water Environment Association Manual of Good Practice* for land application of biosolids. This document includes plans and standardized forms that could be used in the management and administration of the general WDR program. Mitigation measure 5-1 recommends the review of the manual, which we support.

16-3

Consistency of Terms

The term applier and discharger appear to be interchangeable. The word discharger is used throughout the DEIR but not defined in the finding section of the GO. In the finding section, the word applier is defined. In the pre-application report, the term applier is used. We suggest that one term be defined and used throughout the document.

16-4

Metals

The scientific basis for regulating ten metals is unclear, since the U. S. EPA currently regulates eight metals under the part 503 regulations. The scientific bases for the limits as set forth in the GO for chromium and molybdenum need to be demonstrated before these two additional metals are regulated.

16-5

The copper and lead ceiling concentration limits have been reduced in the GO, also without establishing scientific bases for the reduction.

16-6

Since the SWRCB is committed to developing a DEIR based on sound science, then there must be a valid scientific basis for more stringent metal requirements.

16-7

The U. S. EPA has completed phase one amendments of round one for the 40CFR503 regulations. SWRCB should incorporate the necessary changes to the part 503 regulations into the DEIR. The DEIR states that ten metals are being regulated instead of eight metals as per the 40CFR503 regulations. Chromium is not regulated by the U. S. EPA as being a pollutant that affects biosolids land application. The limits for chromium were deleted from the 40CFR503 rule in October 1995 in Federal Register volume 60 number 206. The limits for molybdenum have been deleted from the part 40CFR503 rule pending EPA considerations. SWRCB should delete molybdenum limits from the cumulative loading requirements or provide a scientific analysis for using the limits stated in the DEIR.

The Draft Environmental Impact Report

The SWRCB has done a fine job preparing this draft program EIR. Nine environmental and public health issues were considered and no impacts were identified which could not be avoided or mitigated. Forty-nine potential impacts were considered and 28 were found to be less-than-significant, 14 potentially significant, and 10 significant. These findings are consistent with the work done at the federal level in the preparation of 40CFR503.

EBMUD strongly supports the SWRCB in their effort to prepare a statewide, unified approach to regulation of the land application of biosolids, including streamlined permit review with CEQA documentation. Most of the mitigation measures proposed in the draft EIR appear to be generally reasonable. Most significant and potentially significant impacts are mitigated by use of a comprehensive pre-application report, which we support.

However, the mitigation measures to control fugitive dust from unpaved roads and the extended grazing restriction periods do not seem reasonable or substantiated, and will cause operational costs to increase, perhaps significantly.

To the extent that agricultural biosolids land application sites are near residential areas, recreational areas, schools, hospitals, recreational and public assembly areas, controlling fugitive dust may be appropriate, but to require this measure for all biosolids land application sites seems inappropriate and unnecessary. Other farming operations in California are not subject to this type of restriction, and therefore, why should farming operations using biosolids be "singled out"? This mitigation measure should be qualified only to actual instances where residential areas, recreational areas, schools, hospitals, recreational and public assembly areas are in close proximity.

Extended grazing restriction periods will reduce the time that a rancher can productively use land, which may have significant economic impact on ranching operations, thereby reducing ranching interest in using biosolids for crop production. The effect would be the reduction of available land for biosolids land application, which will indirectly increase costs. This mitigation measure appears to be based on one study done by the Cornell Waste Management Institute in 1997. The SWRCB acknowledges that the combination of circumstances that could

16-8

16-9

16-10

16-11

16-12

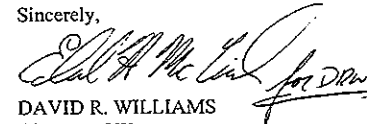
16-13

lead to toxicity in grazing animals in California is only remotely possible. This mitigation measure should therefore be relaxed until more data related to the issue is considered. In addition, the SWRCB should lend more weight to the positive effects that biosolids have on the quality of feed produced along with other beneficial factors, and weigh those factors against the unlikely, rare effect of reduced grazing animal health.

In Closing

The SWRCB is to be commended for its work on the Biosolids Land Application EIR. Hopefully, biosolids land application on a large scale will remain a viable way to recycle valuable nutrients back to the land from whence it came. EBMUD would like to see more emphasis in the EIR on the positive aspects of using biosolids and is pleased to see that the commercial sale of bagged biosolids products for small scale uses in horticulture will not be governed by the GO.

Sincerely,



DAVID R. WILLIAMS
Director of Wastewater

DRW:HWL:cjh

Attachment

W:\Planning\Biosolids\DEIR-comments.doc

16-13
(cont)

16-14

Attachment A

Comments on

GENERAL WASTE DISCHARGE REQUIREMENTS FOR THE DISCHARGE OF
BIOSOLIDS TO LAND FOR USE AS A SOIL AMENDMENT IN AGRICULTURAL,
SILVICULTURAL, HORTICULTURAL, AND LAND RECLAMATION ACTIVITIES

OTHERWISE KNOWN AS THE GENERAL ORDER (GO)
6/99 DRAFT

Comment #	Section	¶	Comment
1	Findings	1.a	Modify to exclude all EQ biosolids that can be classified as a "Fertilizing Material" per 3.1. This type material would be used for fertilizing properties rather than soil amending properties, and is otherwise regulated.
2	Findings	1.b	All Exceptional Quality (EQ) biosolids-derived mixtures consisting of more than or equal to 50 percent biosolids (dry weight) applied at more than 10 dry tons per acre per year for use as a soil amendment to continuous fields.... This phrase is missing from 1b and included in 1c.
3	Findings	1.c	Modify to exclude all EQ biosolids-derived products consisting of 20 percent or less biosolids (dry weight) from the GO. This exclusion would work to foster the preparation of commercial type products. The GO should prescribe some methodology to be used to measure the biosolids dry weight component.
4	Findings	3.n	The definition of "High Potential for Public Exposure Areas" seems ambiguous. The definition should describe the type of land frequented by the public, such as a park or a camping area. Distance may not correlate with extent of public use.
5	Findings	3.q	The definition of "Low Potential for Public Exposure Areas" seems ambiguous. The definition should describe the type of land not frequented by the public, such as a farm. Distance may not correlate with extent of public nonuse.
6	Findings	3.t	The length of time allocated to "Long-term Storage" seems particularly short! EQ biosolids derived materials, like compost, can be stored for lengthy periods of time without detriment to

16-15

16-16

16-17

16-18

16-19

16-20

Comment #	Section	¶	Comment
			the environment. The definition of "long-term" should be modified to pertain to pure semi-solid biosolids, such as digested dewatered cake, liquid sludge, etc., and exclude compost type materials. Paragraph 20 would also need to be modified, such that a separate WDR is not required for compost type materials.
7	Findings	10	The use of fecal coliform, and not salmonella, to determine Class A pathogen level has been included in the GO. 40CFR503 allows for fecal coliform or salmonella. Class A status must be determined at the time of usage (pg. ES-7) The salmonella test should be allowed in the GO, as does 40CFR503, or use a log reduction measure. Most fecal coliforms are not pathogens. Fecal coliform are ubiquitous in the environment, and could regrow in a biosolids material that was Class A at a production facility. Fecal coliforms are only indicators. A 1000 MPN fecal coliform indicates about a 6 or 7 log Reduction, which is very difficult to maintain since fecal coliform are everywhere in nature. A 4 or 5 log reduction would indicate a 99.99+% reduction in coliform which is more reasonable.
8	Findings	15	The GO should be primarily directed to the "applier" of biosolids who physically places the biosolids on the land, rather than the landowner. A landowner may be absent or not directly manage the day-to-day operations of a farm or other type land application site. The applier should be required to get certificates of compliance from other involved parties.
9	Findings	16	What is the basis for the maximum size of 2000 net acres per NOI? Land application operations can involve parcels sizes much larger than 2000 contiguous net acres. This appears to be merely a way to generate fees. The effect of this provision will be to increase costs unnecessarily. The size of the project should be the actual size of the contiguous net acres available, rather than an arbitrary number of acres.
10	Findings	16	Filing fees apply annually until the project is terminated.

16-21

16-22

16-23

16-24

↓ 16-25

Comment #	Section	¶	Comment
			whether or not the land is actually used for land application. The provision should be made that fees are due in any year in which biosolids are applied. This would reduce costs for land application operations during fallow years.
11	Prohibitions	12	Chromium has been added to the metal pollutants concentration limits. What is the scientific basis? The chromium ceiling concentration limit was originally in the Part 503 regulations but was remanded by the court because data does not support the regulation of chromium. Delete chromium from the list.
12	Prohibitions	12	What is the basis for lowering the ceiling concentrations for copper from 4300 mg/kg to 2500 mg/kg, and for lead from 840 mg/kg to 350 mg/kg? This GO is based on 40CFR503, a risk based scientifically derived rule. This concentration change seems subjective, and without basis.
13	Prohibitions	14	The GO calls for no visible airborne particulates leaving the application site during biosolids application or incorporation, whether they are biosolids or native soil. This is probably impossible to realistically achieve, and as such would preclude the application of biosolids to the land, or cause very high costs. Just driving on access roads or positioning application equipment would cause some degree of particulate matter to enter the air. There would be few if any no-wind days to land apply. This section should be modified to say that biosolids application would not be allowed when winds exceeded some realistic wind speed.
14	Discharge Specifications	1	See comment 6 above.
15	Discharge Specifications	4	Biosolids with concentrations less than 40CFR503 Table 3 are not subject to tracking under the federal law. This GO is based on 40CFR503, a risk based scientifically derived rule. This tracking requirement seems subjective, and therefore without basis. Delete the tracking requirement for high quality biosolids.
16	Discharge Specifications	4	The statement including background soil metals and

16-25
(cont)

16-26

16-27

16-28

16-29

16-30

16-31

Comment #	Section	¶	Comment
			metal additions from biosolids was included in this specification. Peer reviewed data and analysis performed during the risk assessment for the part 503 regulations took into account background soil metals and found that the soils throughout the United States was of the same medium and that there was not need to address the background soil metals. What scientific data does the SWRCB have to support this statement?
17	Discharge Specifications	4	40CFR503 excludes the metal molybdenum, pending further review. This GO should be consistent with that exclusion. Delete molybdenum from the GO.
18	Biosolids Storage and Transportation Specifications	1,3, 6, etc	This section appears to be written to pertain to liquid and semi-liquid biosolids cake materials. However, a biosolids product like compost would be severely impacted by this section unless modified. A typical scenario would be the purchase of compost by a vendor from a generator for the sale into the home horticultural market for use as a soil conditioner. The product would be picked up and transported to the vendor by truck in 25 cubic yard lots. The compost would be placed on the ground at the vendors site for sale to customers in small amounts of 1 to 5 cubic yards, and may remain at the site until sold out in 2 weeks, at which time another load of compost would be acquired by the vendor. This type use is excluded from the GO, but this exclusion should be reinforced in the introductory paragraph here.
19	Pre-Application Report	3	Chromium and Molybdenum should be removed from the list. See comments 10 and 15 above.
20	Pre-Application Report	3	One of the key parameters governing the application of biosolids to the land is <u>available nitrogen, both existing in the soil as well as in the biosolids</u> . This is the nitrogen that plants can actually use to grow, and includes the ammonium, nitrate, nitrite ions. Biosolids have the important and valuable beneficial property of containing nitrogen, as well as other nutrients, in organic form that can be slowly released into the soil through mineralization. The Constituent Concentration table should list the available nitrogen for biosolids and soil, which can be easily determined in the laboratory. Otherwise, how can

16-31
(cont)

16-32

16-33

16-34

16-35

Comment #	Section	#	Comment	
			the proposed nitrogen loading be determined as indicated in paragraph 4, Application Area Information or in paragraph 2, Application Information under Annual Reporting? There are mineralization rate formulas, starting with total nitrogen, that could be used, but there are so many site specific and biosolids specific factors to consider, so that accuracy becomes an issue.	16-35 (cont)
21	Pre-Application Report	3	How many samples are required for testing biosolids and soil? This type testing is a major expense, especially methods SW 846 and EPA Method 8270, so the GO should indicate the minimum number of samples required. Why not require a site monitoring plan?	16-36
22	Pre-Application Report	4	The units used for Proposed Nitrogen Loading and Crop Nitrogen Usage should match. For example, if plant available nitrogen is listed as pounds per acre, then crop usage should be shown as pounds per acre, or vice versa. This would reduce the need for RWQCB staff to make further calculations.	16-37
23	Annual Reporting	1	How many samples need to be collected? The implication is that only one sample per year per well is sufficient.	16-38
24	Annual Reporting	3	Chromium and Molybdenum should be removed from the list. See comments 10 and 15 above.	16-39
25	Annual Reporting	4	Chromium and Molybdenum should be removed from the list. See comments 10 and 15 above	16-40
26	General Reporting	1	Annual reports are required by January 15 of the following year. This is not enough time to collect all the required information, and prepare and submit the report. At the same time information is being collected to submit annual reports to the EPA under 40CFR503, which are due February 19 of the following year. The annual report to the State should coincide with the report to the EPA and be due on February 19 of each year.	16-41
27	General Reporting	6	A standard reporting format would assist all parties in the reporting, review and use of the data. This would also be helpful if electronic reporting becomes available in the future.	16-42

Responses to Comments from the East Bay Municipal Utility District

- 16-1. Land application costs will likely increase as an overall result of the proposed GO. However, SWRCB staff is taking a sustainable approach to land application through its proposed GO and believes that the additional conditions and requirements beyond the Part 503 regulations are needed for sustainability. See Response to Comment 8-2.
- 16-2. The commenter requests that the SWRCB review every GO requirement and mitigation measure in the EIR to determine if the requirement is necessary and if the requirements/mitigation measures would make the land application of biosolids cost prohibitive. The proposed GO and the mitigation measures were designed to protect the environment and human health. Additionally, the mitigation measures were designed to be feasible, in compliance with CEQA. Although some of these measures may incrementally add to the cost of land application, they are deemed necessary to adequately protect the state's water quality and public health.
- 16-3. The opinion of the commenter regarding support for Mitigation Measure 5-1 is noted.
- 16-4. See Response to Comment 14-3.
- 16-5. See Master Response 4.
- 16-6. See Master Response 4.
- 16-7. See Response to Comment 16-5 and Master Response 4.
- 16-8. See Response to Comment 14-2.
- 16-9. See Master Response 4.
- 16-10. Comment noted. This comment summarizes the number of impacts presented in the EIR and states that EBMUD supports the SWRCB in its effort to prepare a comprehensive statewide EIR.
- 16-11. See Master Responses 5, 7, and 8.
- 16-12. See Responses to Comments 16-18 and 16-19, and Master Responses 9 and 11 .
- 16-13. This comment also pertains to the proposed mitigation measure to extend the grazing period to 60-90 days, and explains that the extended period may have adverse economic impacts on some biosolids users or make biosolid less competitive than other grazing land soil amendments. It indirectly recognizes a possible unknown impact on grazing animals

and states that the mitigation measure should be relaxed until more is known on this issue. It also states that more should be said of the biosolids' benefits to land productivity and feed quality; this should be balanced against the remote possibility of grazing animal impacts discussed in the draft EIR.

The benefits of biosolids additions to soil fertility and land productivity were addressed on page 4-4 of the draft EIR. But the National Academy of Sciences indicated in its 1996 report on wastewater and sludge use on agricultural crops that the 30-day grazing waiting period following biosolids application should be further researched, indicating a substantial scientific uncertainty regarding this issue.

According to the project description, nearly all land-applied biosolids are cultivated or disced into the soil within 48 hours of application. Depending on the time of year, final cultivation and pasture seeding might occur within days to several weeks after incorporation, with grass/forb germination 2 to 3 weeks or more thereafter. Developing a good erosion-controlling pasture grass cover, and plants with a root system strong enough to withstand grazing pressure, may require another 30-60 days or more, again depending on time of year, rainfall, and temperature conditions. Common practice in California and a best management practice for pasture development and resource protection is to wait at least 60 days after biosolids application and pasture seeding before grazing. The recommended mitigation measure cannot, therefore, be considered an economic disadvantage to those who incorporate biosolids into the soil, as nearly all applicators would practice these measures. In the absence of fully understood scientific facts and with scientific uncertainty, such as the situation here, and where severe economic hardship is not caused by a mitigation measure, it is generally best to be prudent and conservative.

Also see Master Responses 7 and 8.

- 16-14. The commenter's opinion commending SWRCB staff for its work on the EIR is noted. Additionally, the commenter expressed that the EIR should place a greater emphasis on the positive aspects of using biosolids. State CEQA Guidelines Section 15126.2 states that an EIR shall identify and focus on the significant environmental effects of the proposed project. It further states that a lead agency should normally limit its examination to changes in the existing physical conditions in the affected area at the time the notice of preparation is published (if one is published). Therefore, the EIR analysis only identified the physical changes to the environment that could result from the land application of biosolids and did not compare the use of biosolids as a soil amendment to other soil amendments.
- 16-15. The proposed GO is only regulating EQ biosolids where the application rate is at higher rates. These rates are established from communications with industry representatives. Regulation of this material is intended to protect California's resources from applications of biosolids at high-end loading rates. Excessive applications of biosolids and waste disposal converge where applications exceed the agronomic rate and go beyond what is

useful for the typical agricultural operation. Also, at higher application rates, metal accumulations are a larger issue for exceptional quality material.

- 16-16. See Response to Comment 14-15.
- 16-17. The potential for accumulation of metals and organic contaminants from sewage sludge-derived compost or other sewage sludge-derived mixtures at sites where higher loading rates are used poses a threat to water quality and California's resources. Accordingly, such applications will not be exempted from coverage under the proposed GO.
- 16-18. See Master Response 11.
- 16-19. See Master Response 11.
- 16-20. SWRCB staff believes that biosolids should not be transferred to the field and held for long periods. Adverse environmental conditions, including water quality degradation and adverse air quality, may arise if biosolids are stored on the surface for extended periods without incorporation into the soil.
- 16-21. Onsite storage of compost and exceptional quality biosolids can have the same types of environmental impacts as material that is not exceptional quality. The storage restrictions have not been changed.
- 16-22. See Master Response 6.
- 16-23. See Response to Comment 14-3.
- 16-24. See Master Response 10.
- 16-25. Sites with active waste discharge requirements require tracking and oversight regardless of whether the land is fallow. Should a landowner not expect to use biosolids every year, they have the ability to terminate the requirements, provided that they have complied with the applicable waiting periods.
- 16-26. See Master Response 4.
- 16-27. See Master Response 4.
- 16-28. The requirements in the GO have been revised to address the same issue but in a manner that makes compliance easier to evaluate and takes further steps to minimize air quality impacts. The approach requires that biosolids applied to fields designated for tilling have at least 50% moisture and be incorporated into the soil within 24 to 48 hours. To place these requirements in the proposed GO, it has been modified in two locations. The text of the proposed GO, as found in Prohibition No. 14 of Appendix A, now reads:

The application of biosolids containing a moisture content of less than 50% is prohibited. Any visible airborne particulate leaving the application site during biosolids applications or during incorporation of biosolids at the permitted site is prohibited.

The text of the proposed GO, as found in Discharge Specification No. 6 of Appendix A, now reads:

If biosolids are incorporated into the ground, applied to a site where the soil will be tilled, biosolids shall be incorporated within 24 hours after application in arid areas and within 48 hours in non-arid areas. †Tillage practices shall be used which minimize the erosion of soils from the application site by wind, storm water, or irrigation water.

This approach is similar to one taken by the CWEA Manual of Good Practice. Specifying a particular wind speed poses problems for evaluating site microclimates and measuring those wind speeds (e.g., height of measurement, location, time of day). Also see Master Response 9.

- 16-29. See Response to Comment 16-20.
- 16-30. The SWRCB staff believes that it is important to track the cumulative loading of metals to soils in California, even if they are applied in concentrations below the levels identified in Table 3 of the Part 503 regulations. The risk assessments conducted by EPA are still valid, but the cumulative loading tracking is a safeguard against loss of soil productivity and “dumping” of biosolids in one area over an extended time.
- 16-31. See Response to Comment 14-19.
- 16-32. See Master Response 4.
- 16-33. The proposed GO is not applicable to vendors of biosolids, only biosolids applied at the point of use.
- 16-34. See Master Response 4.
- 16-35. The Pre-Application Report and the Annual Report have been revised to include reporting of residual soil nitrogen.
- 16-36. The number of soils tests required should be representative, but would vary with size of the site and the different number of soil types. Such decisions should be made on a case-by-case basis by RWQCB staff. Soil samples are required to be reported only once. The Pre-Application Report has been modified to exclude soil testing using methods 8270 and SW 846.

- 16-37. Comment noted. The units for nitrogen applications now use consistent units.
- 16-38. One sampling result from the groundwater monitoring system is required.
- 16-39. See Master Response 4.
- 16-40. See Master Response 4.
- 16-41. Annual Reports are due on January 15 for all State waste discharge requirements. This is standard operating practice and allows for logging with all other reports throughout the state system. However, Annual Reports have been changed to cover the period between December 1 and November 30.
- 16-42. Comment noted. Electronic reporting is being developed by some of the RWQCBs and the SWRCB.